

HW #28 Examples - The Dot Product

Name: _____

Date: _____ Per: _____

Find the dot product $v \cdot w$.

1) $v = i + 3j$, $w = 7i - j$
 A) 0

B) 10

C) -4

D) 4

1) _____

Find the angle between v and w . Round your answer to one decimal place, if necessary.

2) $v = -3i - 7j$, $w = -6i - 8j$
 A) 23.7°

B) 356.9°

C) 13.7°

D) 6.9°

2) _____

Solve the problem.

3) A power boat in still water maintains a speed of 30 miles per hour. The boat heads directly across a river perpendicular to the current which has a speed of 7 miles per hour. Find the actual speed and direction of the boat.

A) 14 mph; 30° off course

B) 31 mph; 13° off course

C) 30 mph; 13° off course

D) 15 mph; 28° off course

3) _____

State whether the vectors are parallel, orthogonal, or neither.

4) $v = 2i + 4j$, $w = 4i - 2j$
 A) Orthogonal

B) Parallel

C) Neither

4) _____

5) $v = i + \sqrt{3}j$, $w = i - 2j$
 A) Orthogonal

B) Parallel

C) Neither

5) _____

6) $v = 4i + 2j$, $w = 8i + 4j$
 A) Orthogonal

B) Parallel

C) Neither

6) _____

Solve the problem. Round your answer to the nearest tenth.

7) Find the work done by a force of 2 pounds acting in the direction of 41° to the horizontal in moving an object 6 feet from $(0, 0)$ to $(6, 0)$.

A) 9.1 ft-lb

B) 9.7 ft-lb

C) 7.9 ft-lb

D) 18.1 ft-lb

7) _____